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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/341,637	09/03/1999	Petrus Cornelius Jozef Beentjes	APV30918	5374

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EXAMINER

KILKENNY, TODD J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 07/16/2003

26

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/341,637

Applicant(s)

BEENTJES

Examiner

Todd J. Kilkenney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (Specification, page 1, line 4 – page 2, line 15) in view of Aoki et al (US 4,007,078), Ichikawa et al (US 4,994,130) and Murphy (US 3,959,567) and/or Bradley (US 4,289,559). The rejection of record is maintained.

Strip coating a metallic strip by a film laminating processes or extrusion coating processes is well known as admitted by applicant (See Specification, p 1, line 4 – p 2, line 15). Applicant's invention includes forming plastic strip in a continuous manner, whereby the strip is led away from an extrusion process by an "open contact roll" to a haul off roll or the like as to not initiate contact with substrate until strip casting process is monitored and plastic strip is formed with the desired characteristics (e.g. color, thickness, tension). Bonding is then initiated by closing the contact roll, thereby breaking strip from haul off roll and pressing onto substrate.

Aoki et al. teach a method for continuously supplying plastic film strips from an extruder head. Aoki et al fully address the need to avoid feeding extruded plastic to further processing (e.g. a bag making machine, printing machine, packaging machine, or the like) until the strip is formed with predetermined regular or uniform thickness and breadth (Column 1, lines 53-57). The teaching acknowledges that the initial stage of operation in the extrusion process will produce a plastic strip with irregular thickness

and breadth (Column 1, lines 39-44) not suitable for further processing. Aoki et al disclose "At the initial stage of operation of the extruder, however, the film strip extruded from the extruder head does not have a regular thickness and breadth which are predetermined... the film strip formed at the initial stage of operation of the extruder is so irregular in thickness and breath that it is unsuitable for a bag or package which requires precise dimension. ... To avoid such waste of material, it is necessary to delay feeding the film strip to such machine until the film strip being extruded from the extruder is formed to have predetermined regular or uniform thickness and breadth." (col. 2, line 49 - col.3 line 26; col. 4 lines 24 - 44) To monitor the thickness and breadth of extruded strip, Aoki et al teaches detecting means. Aoki et al teach employing a switching mechanism comprising conveyors for guiding plastic strips. Said conveyors are moved to switch the plastic strip from a haul-off roll to the continued operation when the desired properties of the strip have been achieved and maintained from extrusion process. Switching said strip is done in a manner that strip is broken from haul off roll and then guided to further processing.

Ichikawa et al. teach a method for producing a composite laminate wherein a thermoplastic synthetic resin sheet is extruded in a molten state and formed into a sheet with a three-roll casting unit. The thermoplastic sheet is then guided to a hot press bonding roller where it is adhered to an aluminum sheet. Ichikawa et al. teach means of conveying metal substrate, a contact roll, means of casting plastic, a cooling roll for formation of plastic sheet, and means of feeding and guiding the plastic to the substrate via the contact roll as is shown in Figure 1. Ichikawa et al. acknowledge, in an attempt

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to better control the process (including start-up), the thermoplastic sheet may be wound up on a haul off roll prior to bonding so as to separate the extrusion process from the bonding process (Column 3, lines 48-55). Furthermore, Ichikawa et al disclose as is readily known in the art that the surface of the formed laminate should have a minimum of irregularities and should be uniform in thickness.

It would have been obvious to provide means in the Admitted Prior Art to allow the sheet forming process to come to steady state having regular thickness and breadth commencing lamination in view of Aoki et al. and Ichikawa et al. suggesting it is advantageous to do so. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide for opening and closing the press laminating rolls of the Admitted Prior Art to feed to a haul off roll as in Aoki et al in view of the exemplary state of the art teachings in laminating to Murphy (see col. 2, lines 60 – 66 for disclosure of the laminating roll being vertically movable) and/or Bradley (see col. 5, lines 17 – 44 and Fig 1, which discloses crank (15) for controlling the vertical movement of roll 12), suggesting that it is known to provide for opening and closing of press rolls in lamination processes and only the expected results would be achieved.

3. Claims 2, 4 – 6, 8 and 9 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (Specification, page 1, line 4 – page 2, line 15) in view of Aoki et al (US 4,007,078), Ichikawa et al (US 4,994,130) and Murphy (US 3,959,567) and/or Bradley (US 4,289,559) as applied to claims 1 and 3 above, and further in view of Smith et al (US 5,407,702). The rejection of record is maintained.

In regard to claims 2, 12 and 15, the teachings of Smith et al. define a method for coating a metal strip through an extrusion process wherein after the metal strip has been coated with plastic, extra heat treatment is applied downstream (Figure 1, element 42 and Column 3, lines 27-33). Furthermore, Smith et al. disclose said heating element 42 can be an oven (Column 37 – 40). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the extra heat treatment of Smith et al. to the admitted prior art in view of Ichikawa et al. and Aoki et al. to further consummate bonding of the plastic to the metal strip.

In regard to claim 4, Smith et al. teach contact rolls having resilient surfaces, such as elastomers (Column 3, lines 18-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use rubber coated press rolls as in Smith et al. to ensure temperature resilient surfaces on the press rolls to minimize unwanted heat transfer affects from contact with the heated metal strip.

In regard to claims 5, 6 and 9, Smith et al. teach of duplicating the strip coating operation for simultaneously two-sided coating of the metal substrate (Figures 1 and 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to simultaneously coat both sides of a metal strip by duplicating the process as done by Smith et al. to maximize efficiency in a two-sided coating process.

As to claim 8, applicant admits on Page 2 of the specification that a problem with extrusion coating processes involving plastic is that a sufficiently high temperature is needed to allow for the migration speed of the adhesion groups within the plastic to be within tenths of a second to enable high coating speeds. Applicant further admits that a

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simultaneous extrusion process, if done such that the thickness of each extruded coating could be monitored and controlled such that no disturbances could affect the process, would allow for a high enough temperature to promote such adhesion migration speed and therefore an increased coating speed. The process as taught by the Admitted Prior Art in view of Aoki et al, Ichikawa et al, and in further view of Smith et al teaches simultaneous two-sided extrusion-coating with the monitor and control capabilities for when the extruded strip is feed to the substrate, which accordingly would therefore allow for higher temperatures and a higher coating speed.

As to claims 9 and 10, it would have obvious to one of ordinary skill in the art at the time of the invention to uni-axially or bi-axially orient the extruded resin by stretching as such is common practice in the art, wherein one of ordinary skill would readily appreciate that stretching will further aid in achieving a uniform thickness as breadth of the film and will improve the strength and bonding properties of the film.

As to claims 13, 14, 16, 17, as disclosed by Smith the metal strip is straight immediately before, during and immediately after coating with the resin.

As to claims 18 – 20, Smith teaches to preheat the metal strip to a temperature close to or above the melting point of the polymer being applied thereto and that typical preheating temperatures prior to application of the thermoplastic material range from about 121°-260° C (Col. 2, lines 40 – 56).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (Specification, page 1, line 4 – page 2, line 15) in view of Aoki et al (US

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4,007,078), Ichikawa et al (US 4,994,130) and Murphy (US 3,959,567) and/or Bradley (US 4,289,559) as applied to claim 1 above, and further in view of Nishida et al (US 5,952,017). The rejection of record is maintained.

It is well known to use cooling rolls in forming plastic strips from extrusion processes as taught for example by Ichikawa et al. However, Ichikawa et al is silent as to the cooling rolls being internally water cooled. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the cooling roll used to form the plastic strip from the extrusion coating process as taught by the Admitted Prior Art in view of Aoki et al, Ichikawa et al be internally water cooled, since Ichikawa et al teach of a cooling roll and it is well known that cooling rolls can be made cool by internal cooling water as taught for example by Nishida et al (Column 14, lines 9 – 15).

Response to Arguments

5. Applicant's arguments filed 5-5-03 have been fully considered but they are not persuasive.

The admitted prior art process suggests an extrusion coating process for providing a plastic film onto a metal substrate in a continuous manner. Aoki et al teach continuous a plastic film extrusion process and disclose the desirability of letting the extruded plastic film stabilize (e.g. uniform thickness) before presenting it for additional processing, and Ichikawa et al, directed towards metal-film laminates, suggest initially separating the film extrusion process and lamination process for better process control. Therefore, Ichikawa et al and Aoki et al provide ample motivation for stabilizing the

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extrusion of plastic films prior to further processing. In having been motivated by Aoki et al and Ichikawa et al to offer initial separate control between the plastic film extrusion from the lamination to the metal substrate of the admitted prior art process and given that Ichikawa et al fail to suggest means to carry out this separation and Aoki et al teach a complicated switching mechanism, one of ordinary skill would have been additionally motivated to look to the plastic film lamination art for simpler means that would provide for this separation control. The secondary references to Bradley and/or Murphy, both directed to lamination processes for plastic films, are provided as exemplary evidence that it is known to include laminating rolls that are vertically moveable. In view of this teaching, one of ordinary skill in the art would have readily appreciated and been motivated to include such known vertically moveable lamination rolls to the admitted prior art process to carry out the separation between the extrusion and laminating processes of the admitted prior art process as such vertically moveable rollers would offer a simple and efficient way (i.e. employs lamination rolls already required in the admitted prior art process) to institute the separation control as rendered desirable by Aoki et al and Ichikawa et al.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

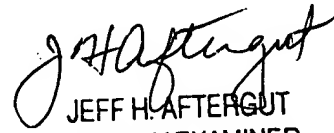
Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Todd J. Kilkenny** whose telephone number is **(703) 305-6386**. The examiner can normally be reached on Mon - Fri (9 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

TJK

TJK
July 11, 2003


JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300